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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,700	03/18/2004	Kenneth L. Weiss	91830.0523397	7816

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EXAMINER	
LAURITZEN, AMANDA L	

ART UNIT	PAPER NUMBER
3737	

NOTIFICATION DATE	DELIVERY MODE
10/11/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/803,700	<b>Applicant(s)</b> WEISS, KENNETH L.	
	<b>Examiner</b> Amanda L. Lauritzen	<b>Art Unit</b> 3737	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 July 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 12, 13 and 15-26 is/are pending in the application.
- 4a) Of the above claim(s) 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-5, 12, 13 and 15-24 is/are rejected.
- 7) ☒ Claim(s) 25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

This Action is in response to the Amendment submission with request for continued examination (RCE) of 23 July 2007.

***Rule 130, 131 or 132 Affidavit***

Acknowledgement is made of the Affidavit submission of 23 July 2007 to identify Kenneth L. Weiss as the sole inventor in this application. Publications related to the claimed subject matter are made of record and have been placed within the application file. The pending claims meet the requirement for patentability under 35 U.S.C. 102(f).

***Response to Arguments***

Applicant's arguments with respect to claims 15-24 have been considered but are moot in view of the new ground(s) of rejection.

***Election/Restrictions***

As discussed in the interview of 15 May 2007, the subject matter of claim 26 (previously newly proposed claim 21 at the time of interview) is independent or distinct from the invention originally claimed for the following reasons:

The related inventions are distinct if (1) the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function or effect; (2) the inventions do not overlap in scope, i.e., are mutually exclusive; and (3) the inventions as claimed are not obvious variants. See MPEP § 806.05(j). In the instant case, the inventions as claimed are merely related in their identification of the AC-PC reference line (identification of the line not even being positively recited in the body of claim 26) and can very well have a materially different mode of operation and/or effect. Additionally it is Examiner's belief that the variation in the claimed subject matter of each invention is not obvious.

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Examiner is requiring election of claims based on original presentation, corresponding to current pending claims 1-5, 12, 13 and 15-25.

It is noted that, should Applicant wish to positively recite identification of the AC-PC reference *line* within the body of claim 26, and if it were specified that an angle were calculated between the patient's hard palate and that reference line in the MR scan, as has been recited within the other claim groups, then Examiner would not require restriction of inventions due to overlap in subject matter.

## DETAILED ACTION

### *Priority*

1. Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-5, 12 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant has amended claims to specify that the AC-PC reference line is approximated as being about 12 degrees more extended than the hard palate in a diagnostic reference image, but this degree measure among anatomical landmarks is regarded as an inherent property of human anatomy if it is not recited in context with the type of image or a particular view for which this measure is identified (and further raises issues regarding nonstatutory subject matter, addressed herein below). Examiner notes that the specification details that this angle measure is identified within a lateral midline image and notes that if this were incorporated into the claim language then both rejections under 35 U.S.C. 112 and 35 U.S.C. 101 raised herein would be resolved and subsequently withdrawn.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1-5, 12 and 13 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Reciting an angle measure among anatomical landmarks is regarded as an inherent property of human anatomy if it is not recited in conjunction with the type of image for which this measure is extracted. Examiner suggests incorporating that the measure is taken within a lateral midline image, as recited in Applicant's specification, to obviate the rejection.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 15-24 are rejected under 35 U.S.C. 102(e), or alternatively, under 35 U.S.C. 103(a) as being unpatentable over deCharms (US 6,996,261).

Regarding claims 15 and 18, deCharms discloses a method implying a computer program product and associated apparatus (including medical device and scanner) in which a two dimensional image is produced for identification of the AC-PC reference line and coordinate system of a diagnostic image (col. 39, lines 19-43; col. 86, lines 14-17, lines 33-44 and line 65;

col. 31, lines 44-53; col. Col. 87, lines 2-12). The image processor of deCharms further prescribes a subsequent scan based on the identified AC-PC reference line (see col. 88, lines 6-11 in which sagittal localization and anatomical scans are followed by functional scans) and includes repeat determination of current coordinates of the AC-PC reference for accommodating changes in patient head position since the previous position determination (see movement cancellation software of col. 90, lines 15-18). Regarding claims 18-20, deCharms '261 further discloses a program configured to receive a diagnostic image of a patient's brain to determine the coordinates of a Talairach AC-PC reference line within the diagnostic image and to define a coordinate system of the diagnostic image with reference to the AC-PC line as well as a signal bearing media, with the program comprising at least one of a recordable media and a transmission-type media (col. 31 lines 41-52 in which the previously identified AC-PC region of interest is saved numerically to some form of memory). The program is disclosed to receive the diagnostic image (mid-sagittal view at col. 86, line 39) comprising one from either a lateral CT image and a midsagittal MRI image. Features recited in depending claims are either addressed in a previous Action or are regarded as obvious within the skill of the art (e.g., obtaining a lateral image view as recited in claim 17).

Regarding claim 21, deCharms identifies many regions of interest for identification in patient scans, the disclosure is silent regarding the superior sagittal sinus reference inter alia; however, the invention of deCharms is not limited to identification of the anatomical landmarks listed in Fig. 2 that is cited in conjunction with neuroanatomical texts (col. 28, lines 37-39). Furthermore, deCharms discloses monitoring the blood flow in the vasculature of the brain at appropriate regions of interest (col. 92, lines 28-29). It would have been obvious to one of

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ordinary skill in the art at the time the invention was made to have incorporated monitoring of the superior sagittal sinus in order to assess blood flow at the openings of the superior cerebral veins which converge at this region of the brain (Henry Gray's Anatomy of the Human Body, 1918, p. 652).

***Allowable Subject Matter***

5. The subject matter of claims 1-5, 12 and 13 is allowable over the prior art, in that the feature of utilizing the hard palate to identify the AC-PC reference line as being about 12 degrees extended from a line passing therethrough, in combination with the other limitations of the claim(s), is not taught or suggested in the prior art. Allowability of claims is contingent upon resolution of rejections under 35 U.S.C. 112 and 101, detailed in above sections 2 and 3.

6. Claim 25 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The subject matter herein, as depending from claim 18, recites that the angle measure among landmarks is identified within a lateral CT scout image and therefore Examiner regards the subject matter to be distinctly claimed and statutory.

***Conclusion***

The prior art made of record and cited on form PTO-892 though not relied upon is considered pertinent to applicant's disclosure for determining an AC-PC reference line utilizing two-dimensional image data.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amanda L. Lauritzen whose telephone number is (571) 272-4303. The examiner can normally be reached on Monday - Friday, 8:30am - 5:00pm.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian L. Casler can be reached on (571) 272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



ALL

10/1/2007



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